

CLAIMS

What is claimed is:

1. A method for performing testing of a simulated direct access storage device in a testing simulation environment, said method comprising:
 - providing a software representation of a plurality of hardware components within said simulated direct access storage device;
 - providing a control program module within said testing simulation environment, wherein said control program module interacts with said software representation of said plurality of hardware components;
 - providing a testing program for interacting with said control program module and said software representation of said plurality of hardware components;
 - in response to detection of an occurrence of a pre-selected event within said simulated direct access storage device, sending one or more codes from said testing program to said software representation of said plurality of hardware components; and
 - determining whether or not a response by said control program module to said one or more codes is correct.
2. The method of Claim 1, wherein said plurality of hardware components comprises a microprocessor.
3. The method of Claim 1, wherein said one or more codes represent a hardware error event.
4. The method of Claim 1, wherein said one or more codes represent a software error event.
5. The method of Claim 1, wherein said testing program is a behavior simulation program.

6. The method of Claim 1, wherein said one or more codes comprise one or more predefined stimuli and one or more debug instructions.
7. The method of Claim 1, wherein said testing program simulates said plurality of hardware components processing said one or more codes in real-time.
8. The method of Claim 1, wherein said control program module comprises a control program-under-development for use with a direct access storage device.
9. The method of Claim 1, wherein said one or more codes target one or more elements of said control program module.
10. The method of Claim 1, wherein said one or more codes target one or more elements of said plurality of hardware components.
11. The method of Claim 1, wherein said pre-selected event comprises a return value of a sector read matching a predefined value.
12. The method of Claim 1, wherein said pre-selected event further comprises a simulated memory register in said plurality of components reading a predefined value.
13. The method of Claim 1, wherein said sending step further comprises writing a value to a memory register in said plurality of components.
14. The method of Claim 1, wherein said determining step further comprises recording said response.
15. The method of Claim 1, wherein said one or more codes are stored in a testing event script file data structure.

16. The method of Claim 1, wherein said determining step further comprises reporting said response to one or more items of user I/O.
17. The method of Claim 1, wherein said pre-selected event includes the passage of a predefined length of time.
18. The method of Claim 1, wherein said pre-selected event comprises a return value of a sector read not matching a predefined value.
19. The method of Claim 1, wherein said pre-selected event comprises said control program module executing a pre-selected instruction.

20. A method for performing testing of a simulated direct access storage device in a testing simulation environment, said method comprising:

- providing a software representation of a plurality of hardware components, said plurality comprising a microprocessor and one or more application-specific integrated circuits within said simulated direct access storage device;

- providing a control program module, comprising a control program under development for use with a direct access storage device, within said testing simulation environment, wherein said control program module interacts with said software representation of said plurality of hardware components;

- providing a behavior simulation testing program for interacting with said control program module and said software representation of said plurality of hardware components in real time;

- in response to detection of an occurrence of a pre-selected value in a pre-selected register within said simulated direct access storage device, sending one or more codes, said codes comprising error messages simulating a hardware error event and debug instructions, from a testing script file data structure associated with said testing program to said software representation of said plurality of hardware components by writing said codes to a memory register in said plurality of components;

- determining whether or not a response by said control program module and said plurality of hardware components, to said one or more codes is correct;

 - recording said response;

 - reporting said response to one or more items of user input/output hardware.